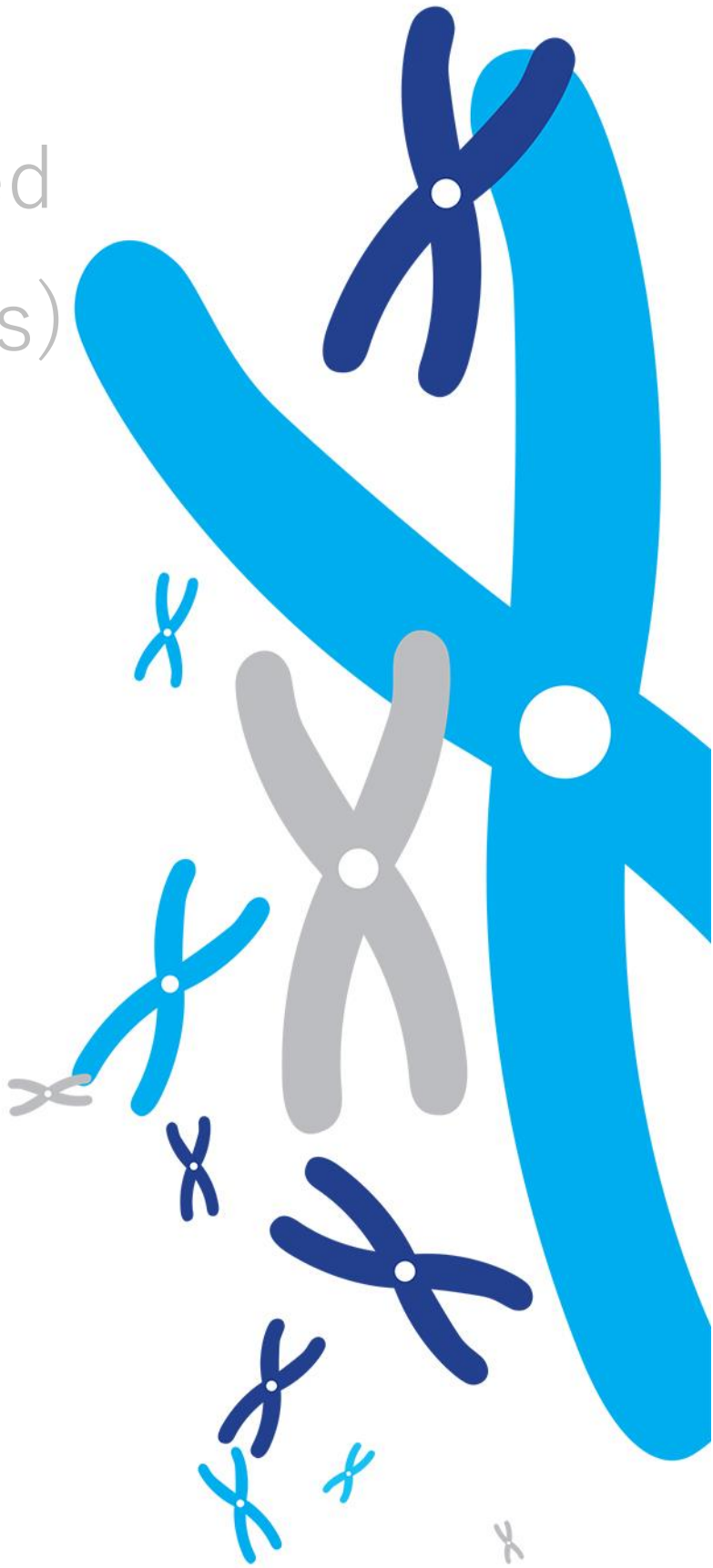
CELL guidance systems

Frequently Asked Questions (FAQs)

aCGH and AGH

Cytogenetics Services



Version 1.0

aCGH and AGH Array hybridization

FAQs

- **What are the cytogenetics services offered by Cell Guidance Systems?**

Cell Guidance Systems offers a range of cytogenetics services, including karyotyping and AGH (array genomic hybridization) / aCGH (array comparative genomic hybridization). FISH analysis may also be available upon request, please contact us at info@cellgs.com for further information.

- **What are the advantages of the array services compared with traditional karyotyping?**

Both array platforms offer a high-resolution analysis which allows for the detection and reporting of abnormalities that would be missed by traditional G-banding. This allows for the reporting of copy number variations (CNVs) and loss of heterozygosity (LOH) on a much finer scale.

- **What are the sample requirements?**

The sample requirements are:

- Sample type: isolated DNA
- Concentration: >50 ng/µl
- Minimum total volume: 1 µg
- Purity: A260/A230 = 1.8-2.2 A260/A280 >1.8

- **How should I pack the samples for shipment to Cell Guidance Systems?**

DNA samples are shipped under “Biological Substances Category B”, so the package should be prepared using the triple packaging system consisting of a leak-proof primary inner layer, a leak-proof secondary layer, and an outside box with labels marking the contents as dangerous. Full instructions on packaging and customs clearance indications are provided in the following document: link to document.

- **When can I send my samples for analysis?**

Please do not send any samples without notice. Please contact us by email at info@cellgs.com to schedule your samples for arrival.

- **What are the conditions of the service?**

The array CGH / AGH services are only available for human samples. We will provide precise instructions on preparation of samples.

- **How quickly can I expect my results?**

Reports will be provided by Cell Guidance Systems within 15 – 17 business days after the DNA samples have been received at our laboratories. Please note that lead times can be longer during busier periods. If this applies to your order, our team will keep you updated.

- **What data will I be issued at the time of reporting?**

A summary report of the results will be issued following completion of the analysis. This will include the array profile overview, details of any abnormalities detected, and a description of the analysis carried out. This will be emailed to you in PDF format, along with a TIFF file containing an image of the genome overview.

Raw data from the analysis is not available for external transfer and so cannot be provided for either AGH or aCGH.

- **Which service (AGH or aCGH) best suits my needs?**

This is entirely dependent on your samples and the nature of your research.

AGH uses smaller probes and often performs better for DNA samples with less optimal quality. The platform offers higher genome-wide resolution and provides the information about the acquired loss of heterozygosity (LOH). It also allows the calculation of B-allele frequency which is used to determine mosaicism for DNA copy number changes and LOH.

Whilst aCGH offers a lower average resolution than AGH, it does offer the ability to co-hybridize samples. This is especially beneficial in comparing cell lines throughout a period of passaging, or comparing a sample to the base cell line that it was derived from.

- **What control DNA does Cell Guidance Systems provide for aCGH?**

Your sample will be sex-matched and co-hybridized with either Human Male or Human Female control DNA from Promega.

- **What is the resolution of each array platform?**

aCGH on the Agilent 8x60k platform has an average resolution of 500kb.

AGH on the Affymetrix CytoScan 750k platform has an average resolution of 200kb.

These average resolutions are based upon factors such as the size and number of probes on the array, and the genomic distance between them.

- **What types of abnormalities are reported?**

Acquired copy number variation (CNVs) and loss of heterozygosity (LOH) present in at least ~15-20% of cells will be reported.

For the Affymetrix 750k platform (AGH), an assessment of normal variation is made with reference to ~5000 normal control samples and a database of ~10,000 clinical samples. However, benign constitutional (heritable) copy number variations (CNVs) will not be reported.

- **What is the best method for isolating good quality DNA?**

If you do not have experience in isolating DNA, or are experiencing issues with sample quality, then we recommend using the Qiagen DNeasy Blood and Tissue Kit.

Cell Guidance Systems' reagents and services enable control, manipulation and monitoring of the cell, both *in vitro* and *in vivo*

Growth Factors
- Recombinant
- Sustained Release

Exosomes
- Purification
- Detection
- Tracking
- NTA Service

Small Molecules

Cell Counting Reagent

Matrix Proteins

Cell Culture Media
- Pluripotent Stem Cells
- Photostable
- *In Vitro* Blastocyst Culture
- ETS-embryo Culture
- Custom Manufacturing Service

Gene Knock-Up System

Cytogenetics Analysis

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